

**WHAT IS CLAIMED IS:**

1        1. A method of processing a call of a wireless local area network exchange using a callback

2        function, comprising the steps of:

3                periodically transmitting a keep-alive signal to the wireless local area network exchange from  
4        terminals;

5                considering terminals from which the keep-alive signal is not transmitted as keep-dead  
6        terminals, and transmitting a telephone number list of the keep-dead terminals to each terminal by  
7        the wireless local area network exchange;

8                attempting calls to target terminals to be substantially called, and requesting a callback  
9        service according to user intentions when telephone numbers of the target terminals are stored in the  
10      telephone number list by the terminals; and

11                automatically attempting the calls to the target terminals from the terminals when the target  
12      terminals are converted into a keep-alive state from a keep-dead state and the callback service is  
13      requested.

1        2. The method of claim 1, wherein the step of periodically transmitting the keep-alive signal

2        comprises the steps of:

3                comparatively deciding whether a keep-alive transmission period has come by the terminals;

4                transmitting terminal state information to the wireless local area network exchange when the  
5        keep-alive period has come; and

6 receiving the terminal state information from a plurality of terminals, and upgrading contents  
7 of a terminal state information storage by the wireless local area network exchange.

1 3. The method of claim 1, wherein the step of considering terminals from which the  
2 keep-alive signal is not transmitted as keep-dead terminals comprises the steps of:

3 comparatively deciding whether it is time for transmitting other terminal information to each  
4 terminal by the wireless local area network exchange;

5 considering terminals from which the keep-alive signal is not transmitted as keep-dead  
6 terminals among other terminal information, and transmitting an telephone number list about the  
7 keep-dead terminals to other terminals; and

8 receiving the telephone number list, and upgrading contents of the telephone number list by  
9 the terminals.

1 4. The method of claim 1, wherein the step of attempting calls to target terminals further  
2 comprises the steps of:

3 attempting calls to target terminals from the terminals when telephone number digits are  
4 performed by users;

5 comparatively deciding whether telephone numbers of the target terminals for the calls  
6 requested by the terminals are stored in the telephone number list corresponding to a keep-dead state;

7 performing a normal call processing procedure when the telephone numbers of the target  
8 terminals are not stored in the off list;

9                   informing the users of the keep-dead state when the telephone numbers of the target terminals  
10          are stored in the telephone number list;

11                   comparatively deciding whether to use the callback service by the users recognizing the  
12          keep-dead state; and

13                   storing a telephone number of a present target terminal in a call list which is scheduled a call  
14          request when the users select the callback service.

1                   5. The method of claim 1, wherein the step of automatically attempting the calls to the target  
2          terminals comprises the steps of:

3                   periodically comparing the telephone number list, which is a keep-dead terminal list, with  
4          the call list, which is the call request scheduled list by the terminals, in order to use the callback  
5          service;

6                   comparatively deciding whether a number of call list numbers is not stored in the telephone  
7          number list, in order to know a number converted into a keep-alive state from a keep-dead state for  
8          the calls requesting the callback service;

9                   returning to a standby state as the callback service is unnecessary to where there is no change  
10          in the telephone number list by the number converted into the keep-alive state from the keep-dead  
11          state is not stored;

12                   attempting the calls to the corresponding number from a call controller of the terminals in  
13          order to perform the callback service, since the number of the call list numbers is not stored in the  
14          off list, meaning there is a number converted into the keep-alive state from the keep-dead state;

15           comparatively deciding whether to be connected with the target terminals;  
16           making the calls by the users when connected with the target terminals; and  
17           considering that the calls are terminated by the callback service when the users terminate the  
18           calls, and deleting the number of the target terminals to which a present call is made from the call  
19           request scheduled list.

1           6.       The method of claim 1, with the target terminal being any one of a destination  
2           terminal and a receiving terminal.

1           7.       The method of claim 1, with the call request scheduled list being a call list.

1           8. The method of claim 2, wherein the step of considering terminals from which the  
2           keep-alive signal is not transmitted as keep-dead terminals comprises the steps of:

3               comparatively deciding whether it is time for transmitting other terminal information to each  
4           terminal by the wireless local area network exchange;

5               considering terminals from which the keep-alive signal is not transmitted as keep-dead  
6           terminals among other terminal information, and transmitting an telephone number list about the  
7           keep-dead terminals to other terminals; and

8               receiving the telephone number list, and upgrading contents of the telephone number list by  
9           the terminals.

1           9. The method of claim 8, wherein the step of attempting calls to target terminals further  
2           comprises the steps of:

3           attempting calls to target terminals from the terminals when telephone number digits are  
4           performed by users;

5           comparatively deciding whether telephone numbers of the target terminals for the calls  
6           requested by the terminals are stored in the telephone number list corresponding to a keep-dead state;

7           performing a normal call processing procedure when the telephone numbers of the target  
8           terminals are not stored in the off list;

9           informing the users of the keep-dead state when the telephone numbers of the target terminals  
10          are stored in the telephone number list;

11          comparatively deciding whether to use the callback service by the users recognizing the  
12          keep-dead state; and

13          storing a telephone number of a present target terminal in a call list which is scheduled a call  
14          request when the users select the callback service.

1           10. The method of claim 9, wherein the step of automatically attempting the calls to the target  
2           terminals comprises the steps of:

3           periodically comparing the telephone number list, which is a keep-dead terminal list, with  
4           the call list, which is the call request scheduled list by the terminals, in order to use the callback  
5           service;

6           comparatively deciding whether a number of call list numbers is not stored in the telephone

7 number list, in order to know a number converted into a keep-alive state from a keep-dead state for  
8 the calls requesting the callback service;

9 returning to a standby state as the callback service is unnecessary to where there is no change  
10 in the telephone number list by the number converted into the keep-alive state from the keep-dead  
11 state is not stored;

12 attempting the calls to the corresponding number from a call controller of the terminals in  
13 order to perform the callback service, since the number of the call list numbers is not stored in the  
14 off list, meaning there is a number converted into the keep-alive state from the keep-dead state;

15 comparatively deciding whether to be connected with the target terminals;

16 making the calls by the users when connected with the target terminals; and

17 considering that the calls are terminated by the callback service when the users terminate the  
18 calls, and deleting the number of the target terminals to which a present call is made from the call  
19 request scheduled list.

1 11. The method of claim 2, wherein the step of attempting calls to target terminals further  
2 comprises the steps of:

3 attempting calls to target terminals from the terminals when telephone number digits are  
4 performed by users;

5 comparatively deciding whether telephone numbers of the target terminals for the calls  
6 requested by the terminals are stored in the telephone number list corresponding to a keep-dead state;

7 performing a normal call processing procedure when the telephone numbers of the target

8        terminals are not stored in the off list;

9                informing the users of the keep-dead state when the telephone numbers of the target terminals  
10      are stored in the telephone number list;

11                comparatively deciding whether to use the callback service by the users recognizing the  
12      keep-dead state; and

13                storing a telephone number of a present target terminal in a call list which is scheduled a call  
14      request when the users select the callback service.

1                12. The method of claim 2, wherein the step of automatically attempting the calls to the target  
2      terminals comprises the steps of:

3                periodically comparing the telephone number list, which is a keep-dead terminal list, with  
4      the call list, which is the call request scheduled list by the terminals, in order to use the callback  
5      service;

6                comparatively deciding whether a number of call list numbers is not stored in the telephone  
7      number list, in order to know a number converted into a keep-alive state from a keep-dead state for  
8      the calls requesting the callback service;

9                returning to a standby state as the callback service is unnecessary to where there is no change  
10     in the telephone number list by the number converted into the keep-alive state from the keep-dead  
11     state is not stored;

12                attempting the calls to the corresponding number from a call controller of the terminals in  
13     order to perform the callback service, since the number of the call list numbers is not stored in the

14 off list, meaning there is a number converted into the keep-alive state from the keep-dead state;  
15 comparatively deciding whether to be connected with the target terminals;  
16 making the calls by the users when connected with the target terminals; and  
17 considering that the calls are terminated by the callback service when the users terminate the  
18 calls, and deleting the number of the target terminals to which a present call is made from the call  
19 request scheduled list.

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1 13. An apparatus for processing a call of a wireless local area network, comprising:  
2 a terminal, comprising:  
3 a user interface interfacing with a user to perform a corresponding command  
4 according to a selected operation of the user;  
5 a call controller overall controlling calls;  
6 a network interface interfacing to physically perform communication between the  
7 terminal and the wireless local area network exchange; and  
8 a system interface interfacing with a wireless local area network exchange system and  
9 having data on an the telephone number list storing a list of keep-dead target terminals and data on  
10 a call list storing a call request scheduled list corresponding to telephone numbers to which a  
11 callback service is requested by the user among telephone numbers of the target terminals that fail  
12 to call attempts; and  
13 a wireless local area network exchange, comprising:  
14 a call controller overall controlling the calls;

15                   a terminal interface considering terminals from which a keep-alive signal is not  
16                   transmitted as keep-dead terminals as interfacing with the terminal and storing the telephone number  
17                   list about the keep-dead terminals in a terminal state information storage;

18                   a network interface interfacing to physically perform communication between the  
19                   terminal and the wireless local area network exchange; and

20                   an access point connected to the network interface in a wire line to enable wireless  
21                   communication between the wireless local area network exchange and the terminal and transceiving  
22                   a wireless signal to the terminal.

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1                   14. An apparatus for processing a call of a wireless network, comprising:

2                   a terminal, comprising:

3                   a user interface interfacing with a user to perform a corresponding command  
4                   according to a selected operation of the user;

5                   a call controller controlling calls;

6                   a network interface interfacing to physically perform communication between the  
7                   terminal and the wireless network exchange; and

8                   a system interface interfacing with a wireless local area network exchange system and  
9                   having data on an address list storing a list of keep-dead target terminals and data on a call list  
10                  storing a call request scheduled list corresponding to addresses to which a callback service is  
11                  requested by the user among addresses of the target terminals that fail to call attempts; and

12                  a wireless network exchange, comprising:

13                   a call controller controlling the calls;

14                   a terminal interface considering terminals from which a keep-alive signal is not

15                   transmitted as keep-dead terminals as interfacing with the terminal and storing the address list about

16                   the keep-dead terminals in a terminal state information storage;

17                   a network interface interfacing to physically perform communication between the

18                   terminal and the wireless network exchange; and

19                   an access point connected to the network interface in a wire line to enable wireless

20                   communication between the wireless network exchange and the terminal and transceiving a wireless

21                   signal to the terminal.

1                   15. A method of processing a call, comprising:

2                   periodically transmitting a keep-alive signal to a wireless network exchange from a plurality

3                   of terminals;

4                   considering terminals from which the keep-alive signal is not transmitted as keep-dead

5                   terminals, and transmitting an address list of the keep-dead terminals to each terminal by the wireless

6                   network exchange;

7                   attempting calls to target terminals to be substantially called, and requesting a callback

8                   service according to user intentions when addresses of the target terminals are stored in the address

9                   list by the terminals; and

10                   automatically attempting the calls to the target terminals from the terminals when the target

11                   terminals are converted into a keep-alive state from a keep-dead state and the callback service is

12 requested.

1 16. The method of claim 15, wherein the periodically transmitting the keep-alive signal  
2 comprises:

3 comparatively deciding whether a keep-alive transmission period has come by the terminals;  
4 and

5 transmitting terminal state information to the wireless network exchange when the keep-alive  
6 period has come.

1 17. The method of claim 16, wherein the periodically transmitting the keep-alive signal  
2 further comprises of receiving the terminal state information from a plurality of terminals, and  
3 upgrading contents of a terminal state information storage by the wireless network exchange.

1 18. The method of claim 16, wherein the considering terminals from which the keep-alive  
2 signal is not transmitted as keep-dead terminals comprises:

3 comparatively deciding whether to transmit other terminal information to each terminal by  
4 the wireless network exchange;

5 considering terminals from which the keep-alive signal is not transmitted as keep-dead  
6 terminals among other terminal information, and transmitting an address list about the keep-dead  
7 terminals to other terminals; and

8 receiving the address list, and upgrading contents of the address list by the terminals.

1           19. The method of claim 18, wherein the attempting calls to target terminals further  
2           comprises:

3           attempting calls to target terminals from the terminals when address characters are  
4           performed;

5           comparatively deciding whether addresses of the target terminals for the calls requested by  
6           the terminals are stored in the address list corresponding to a keep-dead state;

7           performing a normal call processing procedure when the address of the target terminals are  
8           not stored in the off list;

9           informing the users of the keep-dead state when the addresses of the target terminals are  
10          stored in the address list;

11          deciding whether to use the callback service by the users recognizing the keep-dead state; and

12          storing an address of a present target terminal in a call list which is scheduled a call request  
13          when the users select the callback service.

1           20. The method of claim 19, wherein the automatically attempting the calls to the target  
2           terminals comprises:

3           periodically comparing the address list, which is a keep-dead terminal list, with the call list,  
4           which is the call request scheduled list by the terminals, in order to use the callback service;

5           comparatively deciding whether a character of call list addresses is not stored in the address  
6           list, in order to know an address converted into a keep-alive state from a keep-dead state for the calls

7 requesting the callback service;

8 returning to a standby state as the callback service is unnecessary from there being no change  
9 in the address list where the address converted into the keep-alive state from the keep-dead state is  
10 not stored;

11 attempting the calls to the corresponding address from a call controller of the terminals in  
12 order to perform the callback service, since the address of the call list addresses is not stored in the  
13 off list, meaning there is an address converted into the keep-alive state from the keep-dead state;

14 comparatively deciding whether to be connected with the target terminals;

15 making the calls by the users when connected with the target terminals; and

16 considering that the calls are terminated by the callback service when the users terminate the  
17 calls, and deleting the address of the target terminals to which a present call is made from the call  
18 request scheduled list.